

BJL

Notice of Allowability	Application No.	Applicant(s)	
	09/635,606	KRALIK, JOHN C.	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment after final filed 10/02/2006.
2. ☒ The allowed claim(s) ~~is~~ are 1,4-6,8-17 and 19-24.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This office action is in response to the After-Final Amendment filed October 02, 2006.

Accordingly, claims 1, 8, 9 and 14 were amended, claims 2, 3, 7, 8 and 15 were cancelled. Currently, claims 1, 4-6, 8-17 and 19-24 are pending in this application.

Allowable Subject Matter

2. Claims 1, 4-6, 8-17 and 19-24 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed.

Specifically, re claims 1 and 14, none of the prior art of record discloses, in combination with other limitations as claimed, a method of fabricating a diffractive or non-dispersive polymer dispersed liquid crystal electrooptic device, comprising the steps of:

providing a non-chiral nematic liquid crystal in the form of a eutectic mixture, wherein said nematic liquid crystal has a positive dielectric anisotropy;

providing a photo-curable pre-polymer mixture;

mixing said nematic liquid crystal with said photo-curable pre-polymer mixture to form a homogeneous nematic/pre-polymer mixture, with said nematic liquid crystal being greater than 40% (by weight) of said combined homogeneous mixture;

providing a cell comprising a pair of spaced apart transparent substrates that are each coated with a transparent conductive layer, without the inclusion of an alignment layer for aligning said nematic liquid crystal;

Art Unit: 2871

filling said cell with said homogeneous nematic/pre-polymer mixture;
photo-curing said nematic/pre-polymer mixture using a spatially inhomogeneous illumination source;
deriving said spatially inhomogeneous illumination source used to photo-cure the nematic/pre-polymer mixture from the interference of two coherent optical beams within said cell; and
utilizing the above fabrication method to create said diffractive or non-dispersive electrooptic device in the form of a polymer dispersed liquid crystal (PDLC) exhibiting low scattering loss and high index modulation.

The most relevant reference, US 5,942,157 to Sutherland et al. (Sutherland), fails to disclose or suggest mixing said nematic liquid crystal with said photo-curable pre-polymer mixture to form a homogeneous nematic/pre-polymer mixture, with said nematic liquid crystal being greater than 40% (by weight) of said combined homogeneous mixture, and deriving the spatially inhomogeneous illumination source used to photo-cure the nematic/pre-polymer mixture from the interference of two coherent optical beams within the cell. As shown in Fig. 7, Sutherland discloses a method of fabricating a diffractive polymer dispersed liquid crystal (PDLC) electrooptic device exhibiting low scattering loss and high index modulation (See Abstract; col. 8, line 54 through col. 9, line 4; and col. 18, lines 59), wherein the method comprising mixing said nematic liquid crystal with said photo-curable pre-polymer mixture to form a homogeneous nematic/pre-polymer mixture (col. 7, lines 32-51) and deriving a spatially inhomogeneous illumination source used to photo-cure the nematic/pre-polymer mixture

Art Unit: 2871

(See Abstract and col. 5, lines 55-66). However, said nematic liquid crystal is only 10-40% (by weight) of said combined homogeneous mixture and the photo-curing is not from the interference of two coherent optical beams.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms, can be reached at (571) 272-1787.

Thoi Duong



11/07/2006



DUNG T. NGUYEN
PRIMARY EXAMINER